# ANSWERS TO END-OF-CHAPTER QUESTIONS

10‑1 “No firm is completely sheltered from rivals; all firms compete for the consumer dollars. If that is so, then pure monopoly does not exist.” Do you agree? Explain. How might you use Chapter 6’s concept of cross elasticity of demand to judge whether monopoly exists?\

**There is no absolute monopoly since nothing has zero substitutes, but if substitutes are hard to find or poor in adaptability than you have a near monopoly. To check if there are substitutes check the products cross-price elasticity—change in % of Qa/change in % of Pb.**

10‑2 Discuss the major barriers to entry into an industry. Explain how each barrier can foster monopoly or oligopoly. Which barriers, if any, do you feel give rise to monopoly that is socially justifiable?

**Natural monopolies give rise to monopoly that is socially justifiable**. **If the size of the market is relatively small and you need production on a relatively large scale to start to be efficient- (ie high MES) than a monopoly makes sense**

**Patents and licenses** **incentivize innovation**

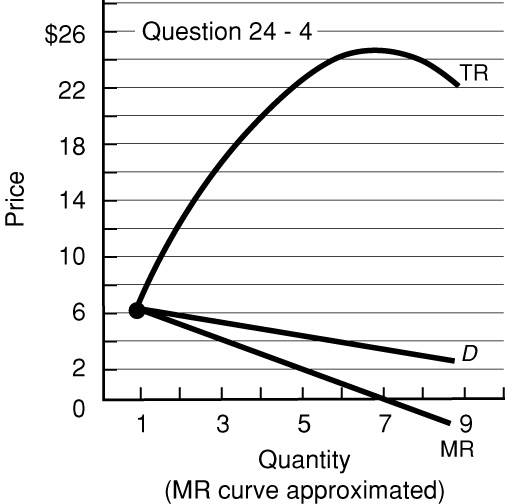
10‑3 How does the demand curve faced by a purely monopolistic seller differ from that confronting a purely competitive firm? Why does it differ? Of what significance is the difference? Why is the pure monopolist’s demand curve not perfectly inelastic?

**The demand curve facing a pure monopolist is downward sloping; that facing the purely competitive firm is horizontal, perfectly elastic**. **D does not equal MR in a monopoly, Production will be less and price will be higher than in pure comp.**

10-4 (*Key Question*) Use the demand schedule to the upper right to calculate total revenue and marginal revenue at each quantity. Plot the demand, total-revenue, and marginal-revenue curves and explain the relationships between them. Explain why the marginal revenue of the fourth unit of output is $3.50, even though its price is $5.00. Use Chapter 6’s total-revenue test for price elasticity to designate the elastic and inelastic segments of your graphed demand curve. What generalization can you make regarding the relationship between marginal revenue and elasticity of demand? Suppose the marginal cost of successive units of output were zero. What output would the profit‑seeking firm produce? Finally, use your analysis to explain why a monopolist would never produce in the inelastic region of demand.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | |  |  | |  |
| **Price** | | **Quantity**  **Demanded** | **Price** | | **Quantity**  **Demanded** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| **$7.00**  **6.50**  **6.00**  **5.50**  **5.00** |  | **0**  **1**  **2**  **3**  **4** | **$4.50**  **4.00**  **3.50**  **3.00**  **2.50** |  | **5**  **6**  **7**  **8**  **9** |
|  |  |  |  |  |  |

Total revenue, in order from Q = 0: 0; $6.50; $12.00; $16.50; $20.00; $22.50; $24.00; $24.50; $24.00; $22.50. Marginal revenue in order from Q = 1: $6.50; $5.50; $4.50; $3.50; $2.50; $1.50; $.50; -$1.50. See the accompanying graph. Because TR is increasing at a diminishing rate, MR is declining. When TR turns downward, MR becomes negative. Marginal revenue is below D because to sell an extra unit, the monopolist must lower the price on the marginal unit as well as on each of the preceding units sold. Four units sell for $5.00 each, but three of these four could have been sold for $5.50 had the monopolist been satisfied to sell only three. Having decided to sell four, the monopolist had to lower the price of the first three from $5.50 to $5.00, sacrificing $.50 on each for a total of $1.50. This “loss” of $1.50 explains the difference between the $5.00 price obtained on the fourth unit of output and its marginal revenue of $3.50. Demand is elastic from *P* = $6.50 to *P* = $3.50, a range where TR is rising. The curve is of unitary elasticity at *P* = $3.50, where TR is at its maximum. The curve is inelastic from then on as the price continues to decrease and TR is falling. When MR is positive, demand is elastic. When MR is zero, demand is of unitary elasticity. When MR is negative, demand is inelastic. If MC is zero, the monopolist should produce 7 units where MR is also zero. It would never produce where demand is inelastic because MR is negative there while MC is positive.



10‑5 (*Key Question*) Suppose a pure monopolist is faced with the demand schedule shown below and the same cost data as the competitive producer discussed in question 4 at the end of Chapter 9. Calculate the missing total- and marginal-revenue amounts, and determine the profit-maximizing price and profit-earning output for this monopolist. What is the monopolist’s profit? Verify your answer graphically and by comparing total revenue and total cost.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | |  |  |  |
| **Price** | | **Quantity**  **demanded** | **total**  **revenue** | **Marginal**  **revenue** |
|  |  |  |  |  |
|  |  |  |  |  |
| **$115**  **100**  **83**  **71**  **63**  **55**  **48**  **42**  **37**  **33**  **29** |  | **0**  **1**  **2**  **3**  **4**  **5**  **6**  **7**  **8**  **9**  **10** | **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_** | **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_**  **$\_\_\_\_** |
|  | |  |  |  |

Total revenue data, top to bottom, in dollars: 0: 100; 166; 213; 252; 275; 288; 294; 296; 297; 290. Marginal revenue data, top to bottom, in dollars: 100; 66; 47; 39; 23; 13; 6; 2; 1; -7.

Price = $63; output = 4; profit = $42 [= 4($63 - 52.50)]. Your graph should have the same general appearance as Figure 22-4. At *Q* =4, TR = $252 and TC = $210 [= 4($52.50)].

10‑6 (*Key Question*) Suppose that a price discriminating monopolist has segregated its market into two groups of buyers, the first group described by the demand and revenue data that you developed for question 5. The demand and revenue data for the second group of buyers is shown in the accompanying table. Assume that MC is $13 in both markets and MC = ATC at all output levels. What price will the firm charge in each market? Based solely on these two prices, what can you conclude about the relative elasticities of demand in the two markets? What will be this monopolist’s total economic profit?

|  |  |  |  |
| --- | --- | --- | --- |
| Price | Quantity demanded | Total revenue | Marginal revenue |
| $71 | 0 | $0 | $63 |
| 63 | 1 | 63 | 47 |
| 55 | 2 | 110 | 34 |
| 48 | 3 | 144 | 24 |
| 42 | 4 | 168 | 17 |
| 37 | 5 | 185 | 13 |
| 33 | 6 | 198 | 5 |
| 29 | 7 | 203 |  |

Group 1 (from Question 5) will be sold 6 units at a price of $48; group 2 will buy 5 units at a price of $37. Based solely on the prices, it would appear that group 1’s demand is more inelastic than group 2’s demand. The monopolist’s total profit will be $330 ($210 from group 1 and $120 from group 2).

10‑7 Assume that a pure monopolist and a purely competitive firm have the same unit costs. Contrast the two with respect to (a) price, (b) output, (c) profits, (d) allocation of resources, and (e) impact upon the distribution of income. Since both monopolists and competitive firms follow the   
MC = MR rule in maximizing profits, how do you account for the different results? Why might the costs of a purely competitive firm and a monopolist be different? What are the implications of such a cost difference?

**With the same costs, the pure monopolist will charge a higher price, have a smaller output, and have higher economic profits in both the short run and the long run than the pure competitor. As a matter of fact, the pure competitor will have no economic profits in the long run even though it might have some in the short run. Because the monopolist does not produce at the point of minimum ATC and does not equate price and MC, its allocation of resources is inferior to that of the pure competitor. Specifically, resources are underallocated to monopolistic industries. Since a pure monopolist is more likely than the pure competitor to make economic profits in the short run and is, moreover, the only one of the two able to make economic profits in the long run, the distribution of income is more unequal with monopoly than with pure competition.**

Economies of scale may be such as to ensure that one large firm can produce at lower cost than a multitude of small firms. This is certainly the case with most public utilities. And in such industries as basic steel-making and car manufacturing, pure competition would involve a very high cost. On the other hand, monopolies may suffer from X‑inefficiency, the inefficiency that a lack of competition allows. Monopolies may also incur nonproductive costs through “rent‑seeking” expenditures. For example, they may try to influence legislation that protects their monopoly powers.

The implications of the lower costs that economies of scale may give a monopolist are that a monopolist may not only produce at a lower cost than pure competitors but, in some cases, may also sell at a lower price. If such is the case, the misallocation of resources is reduced.

10‑8 Critically evaluate and explain:

a. Because they can control product price, monopolists are always assured of profitable production by simply charging the highest price consumers will pay. **False**

b. The pure monopolist seeks the output that will yield the greatest per-unit profit. **False**

c. An excess of price over marginal cost is the market’s way of signaling the need for more production of a good. **True**

d. The more profitable a firm, the greater its monopoly power. **Basically true**

e. The monopolist has a pricing policy; the competitive producer does not. **True**

f. With respect to resource allocation, the interests of the seller and of society coincide in a purely competitive market but conflict in a monopolized market. **True**

g. In a sense the monopolist makes a profit for not producing; the monopolist produces profits more than it does goods. **true**

10‑9 Assume a monopolistic publisher agrees to pay an author 15 percent of the total revenue from text sales. Will the author and the publisher want to charge the same price for the text? Explain.

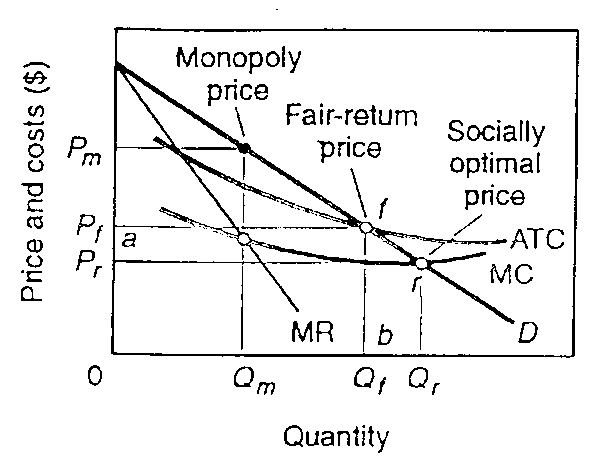
**The publisher is a monopolist seeking to maximize profits. This will occur at the quantity of output where MC = MR. (See Key Graph 10.4)**

**The author who will receive 15% of the total revenue will maximize his payment if the book is priced where MR = 0. This will occur where the price elasticity of demand is equal to 1 and total revenue is maximum. (See Figure 10.3)**

**The author would prefer a lower price than the publisher. Consult Key Graph 10.4 and compare the price charged where MC = MR and the price that would be necessary to maximize total revenue when MR = 0. This is a highly unlikely outcome since the publisher, whether economically literate or not, is certain to recognize the revenue maximizing price as disadvantageous.**

10-10 U.S. pharmaceutical companies charge different prices for prescription drugs to buyers in different nations, depending on elasticity of demand and government-imposed price ceilings. Explain why these companies, for profit reasons, oppose laws allowing reimportation of drugs to

10‑11 Explain verbally and graphically how price (rate) regulation may improve the performance of monopolies. In your answer distinguish between (a) socially optimal (marginal‑cost) pricing and (b) fair‑return (average‑total‑cost) pricing. What is the “dilemma of regulation?”

 **Monopolies that are natural monopolies are normally subject to regulation. Because of extensive economies of scale, marginal cost is less than average total cost throughout the range of output. An unregulated monopolist would produce at Qm when MC = MR and enjoy an economic profit. Society would be better off with a larger quantity. Output level Qr would be socially optimal because MC = Price and allocative efficiency would be achieved. However, the firm would lose money producing at Qr since ATC exceeds the price. In order for the firm to survive, public subsidies out of tax revenue would be necessary. Another option for regulators is to allow a fair-return price that would allow the firm to break even economically (cover all costs including a normal profit). Setting price equal to ATC would deliver Qf output and only partially solve the underallocation of resources. Despite this dilemma regulation can improve on the results of monopoly from the social point of view. Price regulation (even at the fair‑return price) can simultaneously reduce price, increase output, and reduce the economic profits of monopolies.**

10‑12 (*Key Question*) It has been proposed that natural monopolists should be allowed to determine their profit‑maximizing outputs and prices and then government should tax their profits away and distribute them to consumers in proportion to their purchases from the monopoly. Is this proposal as socially desirable as requiring monopolists to equate price with marginal cost or average total cost?

**No, the proposal does not consider that the output of the natural monopolist would still be at the suboptimal level where *P* > MC. Too little would be produced and there would be an underallocation of resources. Theoretically, it would be more desirable to force the natural monopolist to charge a price equal to marginal cost and subsidize any losses. Even setting price equal to ATC would be an improvement over this proposal. This fair-return pricing would allow for a normal profit and ensure greater production than the proposal would.**

10-13 (*Last Word*) How was De Beers able to control the world price of diamonds over the past several decades even though it produced only 50 percent of the diamonds? What factors ended its monopoly? What is its new strategy for earning economic profit, rather than just normal profit?

**De Beers produces 50 percent of all rough-cut diamonds, but buys a large portion of the diamonds produced by other mines. As a result, it marketed over 80 percent of the world’s diamonds.**

**New diamonds were discovered and mined in Angola, Canada, and Australia and some of these diamonds were leaking into the world market. In addition, Russia was allowed to sell a portion of its diamond stock directly into the world market.**

**De Beers’ new strategy is to transform itself into a firm selling premium diamonds and other luxury goods. This new image will be portrayed in an advertising campaign.**